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ABSTRACT

This 60-item, multiple-choice Seafarers Knowledge Inventory was developed for use in marine vocational classes (grades 9-12) to measure a student's knowledge of information that "seafarers" should know. Items measure knowledge of various aspects of boating operation, weather, safety, winds, and oceanography. Steps in the construction of the inventory (KR-20 of 0.86) are also provided. (Author/JN)

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Seafarers Knowledge Inventory

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SE039189

Seafarers Knowledge Inventory

Instructions: Select the one best answer and carefully shade in the appropriate space on the answer sheet.

PLEASE DO NOT WRITE ON THIS INVENTORY!

1. A gas fire can be put out best by using:

   a. Water
   b. Class B fire extinguisher
   c. A class C fire extinguisher
   d. A class D fire extinguisher

2. At the present time there are federal regulations requiring distress flares aboard:

   a. A boat carrying six or less passengers for hire
   b. A coast guard inspected head boat
   c. A party boat fishing at night
   d. All boats

3. What kind of weather is usually associated with high pressure?

   a. Fair weather
   b. Unsettled weather
   c. High winds and warm temperatures
   d. Increasing cloudiness

4. The approach of a cold front usually brings:

   a. An increase in wind velocity
   b. A change in wind direction
   c. A decrease in temperature
   d. All of these
   e. None of these

5. The best method to use to stop an anchor is:

   a. To cut the anchor
   b. Take in about 5 feet of line at a time
   c. Drop another anchor
   d. Give the anchor more scope

6. The law requires a boat owner to:

   a. Position registration numbers forward of amidship
   b. Use block letters and numbers not less than three inches in height
   c. Secure a number in the State where vessel is principally used
   d. All of the above

7. The federal law requires that boat registration may not be valied more than;

   a. 1 year
   b. 3 years
   c. 5 years
   d. 7 years

8. 1 degree latitude is:

   a. a nautical mile
   b. 60 nautical miles
   c. 6 miles
   d. All of the above

9. When entering port from seaward, the buoys marking the left-handed side of the channel are generally of what basic shape:

   a. Nun
   b. Conical
   c. Can
   d. Triangle

10. Anchorage buoys are:

   a. White
   b. Red
   c. Yellow
   d. Black and orange

11. Buoys which are in channels or approaches in good water and may be passed on either side are painted:

   a. With amber and green vertical stripes
   b. With white and red horizontal stripes
   c. With white and black vertical stripes
   d. With red and green horizontal stripes

12. When entering a channel from seaward, you would find the buoys located as follows:

   a. Yellow on starboard, amber on port
   b. Black nun on starboard or left, red can on port or right side
   c. Black nun on starboard, right side, red can on port or left side
   d. Red, even numbers on right, Black odd numbers on the left.

13. Before a compass can be used to navigate correctly, consideration must be given to:

   a. Deviation
   b. Variation
   c. Compass errors
   d. All of the above

14. If you wish to stay in the channel you would:

   a. Stay between two nun buoys
   b. Stay between two can buoys
   c. Stay between the black and red buoys
   d. Both a and b

15. You are between a nun buoy to your port and a can buoy to your starboard. Are you headed:

   a. Upstream
   b. Down stream
   c. To a main body of water
   d. Both a and b

16. Select the correct paint to be used on the bottom of a wood hull boat.

a. White lead base paint
b. Red lead base paint
c. Water base paint
d. Copper base paint

17. Salinity in the sounds generally:

a. Increases near inlets
b. Decreases near inlets
c. Increases away from inlets
d. Is not influenced by inlets

18. Rip currents are caused by:

a. Water running back to sea
b. Water returning to sea through a break in the offshore bar
c. High tides
d. Easterly winds

19. Most waves are caused by:

a. Density differences
b. Bottom Topography
c. Wind
d. All of these

20. A seismic wave may be caused by:

a. Volcanic eruption
b. Earthquake
c. Both of these
d. Neither of these

21. Waves usually approach beaches:

a. Parallel
b. At an angle
c. Neither
d. Both

22. The _____ is caused by waves striking the beach.

a. Longshore current
b. Tidal current
c. Spring current
d. Solar current

Using the diagrams above, answer questions 23, 24, 25.

23. Which prevents waves from reaching shore thus interrupting longshore current. _____

24. Which of these is most likely to increase erosion rate at either end of the structures? _____

25. Which of these structures causes the beach to build up on one side and erode away on the other? _____

26. Washover is likely to occur:

    a. During storms with high tides
    b. Where dunes have been interrupted
    c. Along low areas of beaches
    d. All of the above

27. The thermocline may be defined as:

    a. The depth at which temperature fails to decrease.
    b. The depth at which maximum temperature change occurs with depth.
    c. The depth at which salinity is greatest.
    d. The depth of least density.

28. Winds in the northern hemisphere are not directly north and south because of:

    a. Coriolis force
    b. Pressure differences
    c. Both a and b
    d. Neither

29. Water masses can be identified by their:

    a. Salinity
    b. Temperature
    c. Density
    d. All of the above

30. During the day sea breezes are likely because:

a. The land is cooler
b. Heated air rises and is replaced by cooler air from sea
c. Both a and b
d. Neither a or b

31. A shark attacks and eats a blue-fish. This is:

a. Parasitism
b. Mutualism
c. Commensalism
d. Predation

32. After washover occurs the first plants likely to grow in the area would be:

a. Salt meadowhay
b. Sea oats
c. Marshgrass
d. Yaupon

33. The climax state of succession on a barrier island would be:

a. Marsh
b. Grasses
c. Maritime forest
d. Bare sand

34. The chief factor responsible for zonation of plants in the salt marsh is:

a. Water
b. Salt
c. Light
d. None of these

35. The upper area in some salt marshes where no plants grow is:

a. A salt barren
b. A salt path
c. A dry zone
d. None of these

36. The plant which is dominant in the salt marsh is:

a. Salt meadow hay
b. Sea lavender
c. Grass wort
d. Cord grass

37. This symbol

located on a weather map indicates:

a. A cold front
b. A warm front
c. An occluded front
d. None of the above

38. Which direction is the front moving?

a. Northeast
b. Southwest
c. East
d. West

39. A barometer indicates

a. humidity
b. wind speed
c. air pressure
d. none of the above

40. The leading edge of an air mass is

a. a front
b. a rear
c. the EYE
d. The ribule

41. The width of the boat is the

a. displacement
b. draft
c. beam
d. none of the above

42. If you follow a compass reading of 180°, you will be heading

a. East
b. West
c. North
d. South

43. The main structural backbone of a boat is the

a. tansom
b. keel
c. bulwarks
d. scuppers

44. Longitude lines run

a. parallel to the equator around the earth
b. from North Pole to South Pole
c. parallel in the winter; from North to South in summer
d. none of the above

45. The galley is the boat's

a. bathroom
b. kitchen
c. engine room
d. chart room

46. The color of the port running light is

a. red
b. green
c. white
d. none of the above

47. The color of starboard running light is

a. red
b. green
c. white
d. none of the above

48. The depth of water required to float a boat is

a. depth
b. drawl
c. draft
d. drone

49. The height of a boat's topsides from waterline to deck is

a. draft
b. freeboard
c. beam
d. none of the above

50. The forward end of the boat is the

a. bow
b. stern
c. draft
d. none of the above

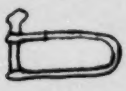
51. When facing forward, the right side of the boat is called

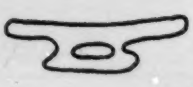
a. the port side
b. the starboard side
c. the bow
d. the stern

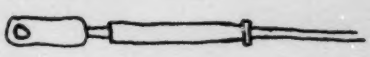
52. When facing forward, the left side of the boat is

a. the port side
b. the starboard side
c. the stern
d. the bow

53. A cleat is

a. 

b. 

c. 

d. none of the above

54. Four short blasts of the horn means

a. danger
b. repeat your lst signal
c. backing
d. a & b above

55. Three short blasts of the horn means the vessel is

a. backing
b. sinking
c. turning right
d. turning left

56. Latitude lines run

a. parallel to the equator around the earth
b. from North Pole to South Pole
c. parallel in the winter; from North to South in summer
d. none of the above

57. The best method of predicting weather from the use of a barometer is;

a. Check to see if needle points to "fair", "change", or "storm"
b. Observe general trend and rate of change over several hours
c. Subtract inches of mercury from millibars
d. None of the above

58. The correct way to dock a boat is to:

a. Approach the dock slowly and carefully and see what effect the current and wind have on the boat
b. Anchor offshore until the wind subsides
c. Approach a dock or landing with the wind and current astern
d. None of the above

59. If your vessel is off shore in heavy weather, and laboring, which one of the following actions would you take?

a. Shut down your engines
b. Reduce speed and change course if necessary
c. Increase your speed
d. Maintain your course and speed

60. The most important element involved in successfully setting an anchor is:

a. Scope
b. Weight of anchor
c. Type of bottom
d. Depth of water

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The Seafarers Knowledge Inventory was developed for use in marine vocational classes grades 9-12 to measure a student's knowledge of information that "seafarers" need to know. Test construction procedures involved:

1. identification of major concepts crucial for individuals who spend time at and on the sea. This involved computer searches and analysis of the literature, surveys of marine science/marine vocational experts from across the nation and examination of existing marine vocational programs.

2. generation of an item bank. Sources were teachers of vocational marine science, existing materials being developed by the North Carolina Department of Public Instruction, and items generated especially for measuring the selected concepts.

3. matching items in the bank with concepts selected for emphasis

4. initial screening for clarity and appropriateness (reading level and level of understanding)

5. expert panel review and analysis; elimination of items deemed unsuitable

6. development of a "preliminary" version with answer sheets composed of eighty items

7. Field testing with one hundred and ten students with approximately half involved in a marine vocations program and the other half in vocational courses but not marine vocations

8. computer survey and analysis for difficulty index, discrimination index and point biserial correlation.

9. elimination of weak and otherwise unsuitable items as indicated through computer analysis and preparation of the final version

10. final version preparation and use to yield a KR-20 of 0.86.